INTERNATIONAL PAPER

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Via Email and FedEx

February 17, 2005

Andrew Fisk
Director, Land & Water
Department of Environmental Protection
17 State House Station
Augusta, ME 04333

Dear Mr. Fisk:

As a large manufacturer and employer located on the Androscoggin River upstream from Gulf Island Pond ("the Pond") and the Livermore Falls Impoundment, International Paper has a significant interest in the development and implementation of a scientifically defensible and equitable Total Maximum Daily Load (TMDL) for these waters.

While International Paper recognizes that DEP is under a self-imposed deadline to issue this proposed TMDL, the company strongly objects to finalizing the proposed TMDL without significant changes. As discussed in greater detail below, the proposed State of Maine, Department of Environmental Protection ("DEP" or "the Department"), Androscoggin River Total Maximum Daily Load for Gulf Island Pond and Livermore Falls Impoundment, prepared by Paul Mitnik, dated December 2004 ("the draft TMDL"), is scientifically unsound and without adequate basis in fact or law. International Paper reserves its right to provide further comment on any revised or alternative TMDL.

Under aforementioned objection and reservation of rights, International Paper submits the following comments on behalf of the International Paper mill located in Jay, Maine.

INTRODUCTION

International Paper is vigilant in its efforts to protect water quality and is committed to assuring that water quality in the Androscoggin River is appropriately protected. We further recognize that water quality protection is critical to the viability of our multi-million dollar assets in the State of Maine; hence it is critical that the TMDL accurately reflect the current hydrodynamic regime and physical setting of Gulf Island Pond and the Livermore Falls Impoundment and that

the TMDL be based upon a water quality standard that defines the appropriate level of protection necessary for those waters.

DEP admits in the draft TMDL, and rightfully so, that more monitoring and analysis is needed to better understand the dynamics of this complex river system and to design a sound strategy for sustained attainment of water quality standards. The admission stands on its own: the issuance of a final TMDL at this time is premature and inappropriate.

The comments below describe deficiencies in the draft TMDL and recommend remedies and options that will make the draft TMDL more scientifically sound. The Department recognized some of the deficiencies in the draft. The comments elaborate on those and identify additional deficiencies that must be considered by the Department as it determines what level of control is justifiable in the first phase of implementation and what data will be needed for any subsequent phases.

International Paper primarily focused our comments on the scientific questions that will have a significant impact on the TMDL's effectiveness. We also raise underlying policy concerns that should be addressed more clearly prior to finalizing the TMDL, especially when one considers the profound and lasting societal impact of the TMDL. The employees of International Paper and their fellow Maine citizens should not bear the burden of a costly and ineffective "solution" for the river that creates more problems than it solves. At the very least, and as DEP has recognized, a phased approach to developing a realistic final TMDL is the proper, practical and defensible plan for implementation of the TMDL.

IMPLEMENTATION PLAN

Faced with uncertainty and lacking critical data, the Department has proposed a "phased implementation" approach for the TMDL. If DEP must issue a TMDL at this time, **International Paper strongly concurs with the Department that the process move forward in distinct phases, thus allowing for reassessment, recalculation and revision with each successive phase.** As EPA states in its 1991 Guidance for Water Quality-Based Decisions:

> This [phased] TMDL requires additional data to be collected to determine if the load reductions required by the TMDL lead to attainment of water quality standards. Data collection may also be required to more accurately determine assimilative capacities and pollution allocations.

EPA's 1999 Protocol for Developing Nutrient TMDLs (p.1-5) offers this further guidance:

> TMDL submittals should include a monitoring plan to determine whether the TMDL has resulted in attaining water quality standards and to support any revisions to the TMDL that might be required. Follow-up monitoring is recommended for all TMDLs, given the uncertainties inherent in TMDL development. The rigor of the monitoring plan should be based on the confidence in the TMDL analysis: a more rigorous monitoring plan should be included for TMDLs with greater uncertainty and where the environmental and economic consequences of the decisions are greatest.

As more thoroughly discussed below, there is significant uncertainty and potential inaccuracies in the proposed phosphorus, TSS and BOD maximum loadings to Gulf Island Pond, and for the proposed TSS load to the Livermore Falls Impoundment. There simply is not the level of data and knowledge necessary to impose such far reaching and aggressively conservative TMDLs. International Paper urges DEP not to finalize the draft TMDLs given the state of the data at this time. Rather, per EPA's recommendations, a phased approach should set interim goals that can be coupled with an implementation plan to evaluate the success of each individual phase of implementation. If attainment with water quality standards is achieved, for example, at the end of the first phase, then there will be no justification to pursue continued loading reductions or further restrictions on the River. It is simply inconsistent to adopt a "final" TMDL before allowing a phased implementation program to progress.

GULF ISLAND POND TMDL FOR PHOSPHOROUS

The most significant impact of the draft TMDL is on the levels of phosphorous loading deemed acceptable for Gulf Island Pond. International Paper recognizes and appreciates the efforts of the Department to reach what it perceives to be an acceptable loading limit for phosphorus. Unfortunately, more time and further study is necessary in order to sufficiently understand this water body in order to reach a scientifically defensible limit for phosphorus. Given the significant potential economic and societal ramifications of the TMDL, incomplete science should not be acceptable. Too many scientific and policy questions regarding phosphorous remain unanswered in the draft TMDL.

Among the scientific questions are:

- What objective measures determine if an algal bloom is occurring or is about to occur?
- How much phosphorus must be present in Gulf Island Pond before an algal bloom occurs?
- What is the relative importance of phosphorus vs. light intensity considering the reductions in color in the river (i.e., will algal blooms increase due to color improvements)?
- What is the influence of Pond flushing on phosphorus accumulation in the Pond and phosphorus releases from the sediments?
- How does the form of phosphorus influence algal blooms?
- How do dam control operations influence algal blooms?
- Is the WASP model sufficient for understanding the dynamics at work in the Pond?
- What are the sources of the phosphorus – both point and non-point?
- How is phosphorus cycled and assimilated throughout the river system?
- What control or mitigation strategies are available and how efficacious are they?

Policy questions include:

- Does Maine's existing water body classification system account for the unique nature of Gulf Island Pond?
- What aesthetic values govern a Class C water body?
- Under what circumstances is a Class C water body rendered "unswimmable," due to the presence of algae?

- What priority should be assigned to this aesthetic issue, versus health issues (such as the presence of e-coli bacteria from combined sewer overflows)?
- What level of certainty is needed in the underlying science before the relative costs and benefits to society can be appropriately weighed?

That these questions are either not addressed at all or are inadequately answered in the draft TMDL lends further support to International Paper's contention that a final TMDL is premature. International Paper urges DEP to respond to these important issues before finalizing the TMDL and to reissue another draft TMDL.

The draft TMDL fails to establish objective measures to determine if an algal bloom is occurring.

The draft TMDL attempts to set a reasonable objective measure for algal blooms. Unfortunately, the Department has not presented a good scientific case for its conclusion that algal blooms are directly associated with chlorophyll-*a* values of 10 ppb or greater.

EPA's Protocol for Developing Nutrient TMDLs (First Edition, 1999) describes chlorophyll-*a* as "a valuable surrogate for algal biomass." A number of case studies appear in the document, among them development of a TMDL for the Tualitin River and the lake into which the river flowed. For that water body, which is similar to the Androscoggin River and Gulf Island Pond, Oregon used 15 ppb as the applicable chlorophyll-*a* numeric criterion to identify where phytoplankton may impair uses. EPA's guidance document also states that North Carolina uses a target of 15 ppb for cold waters and 25 ppb for warm waters, which we would advocate is more similar to Gulf Island Pond. According to EPA, a value of 25 ppb also has been proposed as a criterion for water bodies primarily used for viewing pleasure, safe swimming, fishing and boating.

These criteria presumably were not derived from observations and data taken during a single event (i.e., one bloom in one summer). The Department should recognize in its final report that it is highly premature to set a chlorophyll-*a* threshold of 10 ppb as an indicator of a widespread algal bloom. According to the 2004 Androscoggin River Data Report, "[g]iven the data this summer, there does not seem to be a consistent relationship between elevated chlorophyll-*a* readings and the visual observation of algae blooms." The draft TMDL report makes a similar observation: "There does not appear to be a good relationship between algae blooms and chlorophyll-*a* at any given location." The draft TMDL further states that "water quality trends are difficult to describe with only one summer of data under reduced phosphorous loading." However, notwithstanding their admission as to the uncertainty of their data, DEP then concludes that when using "pond averaged chlorophyll-*a*", "a good relationship is apparent in the chlorophyll-*a* data and observed blooms." As discussed below, this statement is wholly unsupportable.

According to the 2004 Androscoggin River Data Report, there was one widespread bloom observed in 2004 – on August 4, and the bloom "extended from Lower Narrows to the Deep Hole." At this point all the Department can confirm with any certainty is that on one occasion a bloom occurred in a portion of the Pond when the pond-averaged chlorophyll-*a* was 10 ppb. The

Department is not justified in stating that there was a direct and recurring "relationship" between the bloom and the measured pond-averaged chlorophyll-*a*. There is no relationship in the scientific or statistical sense, and pairing a single bloom to a handful of chlorophyll-*a* data simply is not an appropriate basis for establishing a TMDL with highly conservative maximum loadings. The pond-averaged value was calculated from a single day sampling event with very few data points, and 4 out of the 6 data sampling locations were in areas of the Pond without a bloom. If the Department is intent on setting a chlorophyll-*a* threshold based on the average of a limited number of data points, the Department should select the average of the chlorophyll-*a* measurements on August 4 that were taken in the bloom's actual location. Data points outside the location of a bloom are not relevant other than to demonstrate that no bloom exists at those values. The average chlorophyll-*a* value at the location of the bloom on August 4 was approximately 15 ppb. While this number is also statistically suspect, it is certainly more defensible than an average value calculated from sample points at which there was no bloom.

In summary, the DEP's arbitrary decision in its draft TMDL to set 10 ppb as the chlorophyll-*a* threshold for nuisance algal blooms is flawed. Because the Department has acknowledged that additional data is essential to better link chlorophyll-*a* levels to algal blooms, in the first phase of TMDL implementation, the Department should continue to analyze the chlorophyll-*a* threshold for reduction of algal blooms in Gulf Island Pond. Further scientific study and rulemaking may be later initiated to set an appropriate threshold once scientifically defensible data is collected and analyzed.

The draft TMDL does not adequately explain how much phosphorus must be present in Gulf Island Pond before the chlorophyll-a threshold is reached.

The draft TMDL fails to adequately address or substantiate its conclusion regarding the correlation between phosphorus loads to the Pond and chlorophyll-*a* levels.

EPA's 1999 Protocol for Developing Nutrient TMDLs references research completed in Oregon that indicates a relationship exists between chlorophyll-*a* and phosphorus levels. For that study Oregon researchers noted that values between 50 and 100 ppb Total Phosphorus (TP) are sufficient to limit Chlorophyll-*a* to a level below 15 ppb. Ultimately Oregon chose a threshold level of 70 ppb TP as the target threshold for its river impoundment. Maine DEP has chosen a value of 35 ppb as indicative of a chlorophyll-*a* level of 10 ppb and an impending bloom. In light of this research, the value DEP selected is extremely conservative.

Only after the relationship between phosphorus levels and chlorophyll-*a* is understood through a phased TMDL process can a scientifically defensible phosphorus load be established. If during this phased process the concentrations of phosphorus moving to and from the Pond (from point and non-point sources as well as from conversion to orthophosphate and from the sediments) can be determined, an appropriate balance can then be developed. The draft TMDL recognizes that "[a]s additional data are collected on the Pond in the future, more information should be provided to more precisely define the relation of phosphorus loading to algae blooms."

Clearly, the chlorophyll-*a* and phosphorus concentrations currently set forth in the draft TMDL are not fully supported by sound science and are therefore arbitrary. The only sure method to

accurately determine the chlorophyll-*a* level and the corresponding phosphorus concentration necessary to foster an algal bloom is through a long-term program of sampling and analysis of these compounds. International Paper urges DEP to pursue this approach.

The inadequate consideration of non-point source phosphorus invalidates the calibration of the WASP model and its output.

In its 1991 Guidance for Water Quality-Based Decisions, EPA states:

> The total pollutant load to a waterbody is derived from point, nonpoint, and background sources. Pollutant loads may be transported into waterbodies by direct discharge, overland flow, ground water, or atmospheric deposition. The TMDL concept has successfully been applied to develop wasteload allocations for point source discharges in low flow situations where nonpoint sources are not a concern. TMDLs can and should be used, however, to consider the effect of all activities or processes that cause or contribute to the water quality-limited conditions of a waterbody.

To simplify the process of developing a TMDL for phosphorus, the Department attempted to calibrate and verify its model to correspond with low flow conditions, where non-point sources presumably are not of concern. However, the Department was candid in its summary of the problems its approach presented, given the limited dataset:

> The summer of 2004 was cool and wet and was not ideal for judging critical water quality conditions that are ordinarily experienced in dry and warm summers.... Many runoff events occurred in 2004.

The Department also notes that other model runs used in calibration – based on 1998 and 2000 data – "also had the disadvantage of being collected in relatively wet summers involving undesirable runoff conditions." Yet nowhere in its report does the Department address the potential influence of non-point sources on phosphorus levels and algal blooms in the pond.

Regarding the 2004 algal bloom, the draft TMDL attributes the bloom predominantly to inputs from point sources and ignores the possibility that the relatively high proportion of agricultural land adjacent to the Androscoggin River in the river reach between Jay and Gulf Island Pond – and adjacent to the Pond itself – may be responsible for some of the phosphorus loading to Gulf Island Pond under certain conditions, such as those present in 2004. Nor were other non-point sources such as sediment or atmospheric loading addressed.

DEP further states on page 7 of the draft TMDL:

> Data considered most useful for model calibration are low flow and high water temperature periods with no significant runoff prior to and during sampling. For the summer of 2004 this was difficult due to numerous runoff events that occurred throughout the summer.

Rather than admitting that numerous runoff events in 2004 made accurate calibration and verification of its version of the WASP model impossible, the DEP elected to rely on inappropriate data sets and used incomplete or misleading information to justify the use of the data. Figure 2 illustrates the river flow at Rumford, some 60 miles upstream of the pond. As shown in draft TMDL, Figure 2, data set #1 includes four sampling events that ranged from June 16 to July 7; data set #2 consists of four sampling events that occurred from July 21 through August 11. The figure implies that runoff from local rainfall events was not a significant factor that could influence model accuracy during these two periods. However, if the DEP had included local rainfall data available for National Weather Service and other sources in its analysis, it would have been obvious to DEP that significant runoff in the vicinity of the Pond likely occurred during both these periods.

For example, the following localized rainfall events were recorded at the Livermore Falls weather station (NOAA Coop ID 174745) during the time periods used for calibration and verification of the phosphorous assimilation rates.

Calibration Period		**Verification Period**	
June 20	0.40"	July 21	0.31"
June 23	0.20"	July 24	0.28"
June 26	0.07"	July 28	0.22"
June 27	0.41"	Aug 1	0.26"
June 29	0.14"	Aug 2	0.21"
June 30	0.21"	Aug 4	0.16"
July 2	0.38"	Aug 8	0.14"
July 6	0.20"	Aug 11	0.03"

As shown by this data, measurable precipitation frequently occurred in the local watershed region. But, DEP disregarded or never sought to obtain such data.

In addition, unofficial data gathered at the North Jay wastewater treatment facility indicates even more extreme, localized precipitation during the verification period:

Calibration Period		**Verification Period**	
June 19	0.4"	July 17	0.6"
June 21	0.1"	July 18	0.3"
June 25	0.1"	July 19	0.1"
June 26	0.1"	July 20	1.2"
June 28	0.1"	July 23	1.8"
July 1	0.1"	July 27	0.1"
July 5	0.2"	July 31	1.0"
July 7	0.1"	Aug 3	0.4"
		Aug 6	0.1"
		Aug 11	0.2"

The significant differences in precipitation amounts between these two nearby locations illustrate that frequent, intense and geographically limited showers occurred during both the calibration

and verification periods. It is also evident that there was little relationship between several significant rainfall events in the vicinity of the Pond and the river flow at Rumford, which is much more distant from the Pond.

Because the WASP model was calibrated without any non-point source inputs and without a consideration of the influence of localized runoff from the showers that occurred during the calibration and verification periods, the model results are not representative of real world dynamics. Therefore, the proposed phosphorus TMDL that is based on that data is not scientifically valid or fully supportable.

The Draft TMDL improperly relies on WASP model to take address hydrodynamics of Gulf Island Pond.

Gulf Island Pond is a dynamic environment that may respond dramatically to short term events. In preparing the draft TMDL, the DEP used the WASP model to simulate Pond conditions as if the flow of water through the Pond was a constant volume. To capture the effects of flow conditions it is appropriate to use a well calibrated hydrodynamic model to simulate the water movement, called the flow field, for use in the water quality model computations. At present, the flow field used for the Gulf Island Pond TMDL model has been assigned by the DEP modeler. It was created through various transformation and averaging algorithms which are very poorly documented in the modeling report or in the TMDL.

The ability to accurately simulate nutrient transport through the Pond is as important as the water column kinetics in accurately simulating water quality. Implementation of appropriate hydrodynamic modeling can remove this degree of freedom in model calibration, i.e., error from the modeler's external specification of advective and dispersive transport. In addition, the use of a high resolution hydrodynamic model will provide the ability to properly assess effects of Pond flushing rates at various water levels, or for fill and draw operations for power generation.

WASP is not a hydrodynamic model. It is a computer code for simulating water quality for a specified flow field. Given the dynamic flow complexity of the pond, a flow field should be fashioned using appropriate hydrodynamic computational methods. The hydrodynamic model most suitable for Gulf Island Pond is CE-QUAL-W2. The CE-QUAL-W2 model was developed and is maintained through the Army Corps of Engineers, and has been successfully applied to hundreds of lake and river systems. The CE-QUAL-W2 model is well suited to Gulf Island Pond because of its established ability to compute the two-dimensional flow field for narrow systems that stratify.

The deficiencies and limitations of the WASP model were explained to DEP in public comments of July 2002. The DEP response was that "CE-QUAL-W2 would require a much more intensive data effort as input and would require additional data collection and time delays. Given the large additional time commitment and uncertain gains in accuracy of the model predictions of redoing the whole modeling effort, the DEP did not believe that abandonment of the current model was worthwhile." DEP maintained their indefensible position that abandonment of the WASP model was not "worthwhile" and has prepared the draft TMDL based on that antiquated model.

In summary, the impacts of the hydrodynamics of the Pond are not yet understood well enough to support reliable predictions of the point source phosphorus loadings to Gulf Island Pond. The Department acknowledges that additional study is required for development of the model's ortho-phosphorus uptake rate and other key parameters. Nonetheless, the Department has still set a target in the draft TMDL that poses a substantial burden on the point sources on the river and relied on an antiquated and inappropriate model for setting the target limits. It is critical that DEP better understand the cycling and assimilation of phosphorus in the pond. Rather than setting an overly conservative and scientifically unreliable phosphorus TMDL based on limited data, a robust model should be developed using an expanded data set that represents the critical conditions of concern before limitations are set.

DISSOLVED OXYGEN – BOD and TSS TMDLs for GULF ISLAND POND

Unlike phosphorus, dissolved oxygen in Gulf Island Pond has been studied intensively for many years. Nevertheless, important scientific questions remain unanswered:

- How does sediment oxygen demand affect the DO profile observed in Gulf Island Pond?
- What are the decay rates for biochemical oxygen demand from sources upstream of the Pond and how are these decay rates addressed in mathematical models?
- How do the pond's complex hydrodynamics (vertical and horizontal transport and mixing) affect DO?
- How effective is the existing oxygen injection system and how may it be made more effective?
- How does hydropower generation affect dissolved oxygen levels in the pond?
- How do periodic high flows and other flushing events affect the dissolved oxygen profile in the pond?

As with phosphorus, important policy questions arise with potential for large societal impact. Careful consideration is due, especially to the thousands of people along the river whose livelihood depends on papermaking, as to what measures should be taken to raise oxygen concentrations in the deeper parts of the pond: e.g. oxygen injection, reduction or elimination of point sources, or a combination of the two. More fundamentally, is it appropriate to "protect" absent cold-water fish species that likely will not thrive in the warm water, regardless of its oxygen content? To put in another way, is the existing water quality standard for Gulf Island Pond appropriate? The draft TMDL glosses over or completely fails to address such policy considerations. The Department should clearly set out its position on these policy matters rather than leave it to speculation.

The following technical comments address the limitations of the water quality models relied upon by the Department in devising a control strategy for BOD and TSS discharges. This leads to perhaps that most significant policy question: should the Department recommend final target TMDLs for BOD and TSS based on suspect science, or should it set reasonable, intermediate, phased-in targets that provide opportunity for further study and decision-making based on real data. International Paper urges the Department to address the water quality issues with

intermediate steps rather than arbitrarily set restrictive TMDLs for BOD and TSS without adequate justification.

It remains uncertain as to what degree sediment oxygen demand affects the DO profile observed in Gulf Island Pond.

Sediment oxygen demand (SOD) is a significant oxygen sink in the Gulf Island Pond model, as indicated by the Department's sensitivity analysis. The National Council for Air and Stream Improvement, Inc. (NCASI) has filed comments regarding the draft TMDL's discussion of SOD in the Pond. International Paper adopts and incorporates NCASI's comments as if fully set forth herein.

In summary the SOD analysis done to date by DEP is simply just not good enough to support a TMDL for TSS. Until DEP better understands the SOD process in Gulf Island Pond, restraint should be exercised in setting any TMDL for TSS. At the very least, modest, phased-in reductions in TSS loadings should be implemented while a more thorough understanding of the SOD dynamics is developed.

Uncertainty surrounds the decay rates for biochemical oxygen demand

The assignment in the WASP model of different BOD decay rate constants to the Pond for different point source loads is not appropriate. DEP elected to increase the BOD decay rate constant as BOD discharges increased from the mills. As NCASI has pointed out, the proper practice in water quality modeling is not to adjust such parameters without a firm scientific basis. Moreover, in assigning different BOD decay rate constants to the Pond for different point source loads, the Department was not consistent with the fixed BOD decay rates it assigned to the river when it used QUAL2E.

Too many inaccurate and inconsistent assumptions have been made in setting the BOD TMDL. Before a final TMDL for BOD is issued, DEP should remodel the river system using consistent and scientifically defensible assumptions and more complete and representative data.

More study is needed on the effect of the pond's complex hydrodynamics (vertical and horizontal transport and mixing) on DO levels.

If modeling will be used in subsequent stages of implementing the TMDL, International Paper believes that a more sophisticated, up-to-date approach will be necessary to reduce uncertainty in model predictions and to design cost-effective control strategies. The current generation of the model suffers from significant limitations, many of which we have already highlighted. NCASI also highlights these points in their comments.

Given the dramatic economic and societal implications of the results of the modeling conducted by DEP in setting the TMDLs, it is essential that DEP use the best tools available to assure appropriate representation of the water body and to determine the best solution to reaching water quality attainment. DEP has prepared the TMDL using an antiquated model. Whether or not DEP chooses to move forward with finalizing the draft TMDL, International Paper strongly

urges the Department to recognize the limitations of the tools used to set the TMDL, and utilize better models during implementation.

Further analysis is needed on the effectiveness of the existing oxygen injection system and how may it be made more effective.

An additional concern about the vertical transport parameters and the characterization of total transport in the Pond relates to the use of the model as a tool for the design and operation of the oxygen injection system. The large degree of uncertainty in the characterization of transport in the Pond is a significant limitation when evaluating the mitigating effects of oxygen injection, especially in the lower reaches of the pond. The model's current characterization of transport is not adequate for this use.

Again, as with phosphorus, International Paper advocates less reliance on simplistic models as the DEP adopts a phased approach to implementation of the TMDL for BOD and TSS, along with continued development and scrutiny of data. As the National Research Council, in its 2001 review of the TMDL program stated:

> Many debates in the TMDL community have centered on the use of "phased" and "iterative" TMDLs. Because these terms have particular meanings, this report uses a more general term—adaptive implementation. Adaptive implementation is, in fact, the application of the scientific method to decision-making. It is a process of taking actions of limited scope commensurate with available data and information to continuously improve our understanding of a problem and its solutions, while at the same time making progress toward attaining a water quality standard. Plans for future regulatory rules and public spending should be tentative commitments subject to revision as we learn how the system responds to actions taken early on."

International Paper intends to bear a share of the burden for further scientific inquiry and to remain actively involved in the TMDL process as it proceeds.

LIVERMORE FALLS IMPOUNDMENT TMDL FOR TSS

The draft TMDL for TSS in the Livermore Falls Impoundment is based on a *draft* listing of impaired rivers and streams in Maine known as the 2004 Integrated Water Quality Report. (See page 54 of Appendix II.) The cause for the listing is given in the draft report as "aquatic life criteria." The "monitored date" (presumably for non-compliance) is given as 2002. It is premature to list the Livermore Falls Impoundment as impaired, based on the macro-invertebrate sampling that has been conducted thus far by the Department. International Paper has previously set forth its position in correspondence to DEP. (See attached June 2, 2004 letter to Dana Murch from Tom Saviello) International Paper reiterates its opposition to an impairment designation of the Impoundment. The same 2002 data being used by DEP to deem the Impoundment as impaired was described in the draft TMDL as an "anomaly" and DEP, in fact, recommended further sampling and analysis. Then, puzzlingly and arbitrarily, DEP selected the average loading of two years, 1995 and 2000, as the maximum load. The 1995 data is quite dated, and

both years' data precede promulgation of Chapter 579 of Maine's rules, which occurred in 2003, and therefore cannot be used by the Department as the basis for deeming the Impoundment as impaired. As our June 2, 2004 letter stated, International Paper objects to the Department's retroactive use of the earlier data as prohibited by law. As such, based on 2003 and 2004 data, the Livermore Falls Impoundment is not impaired and hence a TSS TMDL for that section of the river is not warranted.

MARGIN OF SAFETY IS UNDEFINED AND OVERLY CONSERVATIVE.

The margin of safety resulting from numerous assumptions made by DEP in the modeling process is overly conservative. NCASI has raised a number of questions concerning the application of such a large margin of safety, including using the highest predicted chlorophyll-*a* concentration for Gulf Island Pond as the basis for the phosphorus TMDL; setting a higher CBOD decay rate (0.04 per day); and assuming that point sources discharge their maximum allocated waste load simultaneously during a 10-year low flow events.

To estimate the magnitude of the MOS, International Paper had predictive modeling conducted using less conservative circumstances than DEP's. The model inputs were altered by lowering the temperature of the river by 1°C, increasing the river's flow rate approximately ten percent, maintaining the CBODu loadings at the current licensed weekly averaged loadings of the paper mills, and assuming the point source phosphorous discharges were equivalent to the averages from the summer 2004 as presented in the TMDL, Figure 18. For consistency with DEP's model, a second oxygen diffuser was left in the model. The results of this model run are striking: more CBODu enters Gulf Island Pond, presumably because the cooler temperature alter removal in the riverine segments; dissolved oxygen levels are at attainment in the pond; and the pond-average chlorophyll-*a* concentration is at the 10 ppb threshold targeted by the DEP.

International Paper urges DEP to include a similar analysis in the final TMDL. By only slightly reducing the MOS, the TMDL may be made significantly more realistic. Given the stakes, DEP needs to be more forthcoming and reasonable regarding the MOS.

SAMPLE ALLOCATIONS

The inclusion of sample allocations in the draft TMDL is premature and unnecessary. The very act of publishing them gives them unsubstantiated legitimacy, may set unreasonable expectations, and is arguably inconsistent with the Department's stated commitment to adopt a phased approach to implementation of the TMDL. Rather than identify specific point sources and sample reductions, DEP should create a hypothetical scenario to establish the process and illustrate the procedures to implement the TMDL. International Paper objects to the inclusion of the sample allocations and urges DEP to remove the sample allocations from the final TMDL.

CONCLUSION

International Paper participates in the National Council for Air and Stream Improvement, Inc. (NCASI). At the request of International Paper and other paper mills on the Androscoggin River, NCASI has submitted separate comments on the draft TMDL. Comments submitted by NCASI are hereby incorporated by reference. In addition, the Gulf Island Pond Oxygenation Partnership, of which International Paper is member, has over the course of several years provided numerous documents and comments to DEP on the development of the draft TMDL. Those prior submittals and those submitted independently by International Paper are incorporated into these comments as if fully set forth herein.

Although DEP has clearly put significant effort into preparing the draft TMDL, it still falls short. This matter is complex and involves high stakes. International Paper encourages DEP to refocus its efforts, with stakeholders, to revise and redraft the TMDL based on a realistic margin of safety that is not unduly burdensome to a select few entities on the river and which also achieves the protections necessary for reaching attainment. To this end, International Paper encourages DEP to fully consider the above comments and fully commit to assuring the development of a practical and attainable TMDL. To discuss these comments further or answer any questions that you may have, please contact me at (901) 419-7141.

Sincerely,

Nehl Aldridge
Manager, EHS
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INTERNATIONAL PAPER

June 2, 2004

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Dear Dana:

This letter is to acknowledge International Paper Company's receipt of Maine DEP's comments on International Paper's draft Annual Water Quality Report for 2003 for the Riley-Jay-Livermore Project (FERC No. 2375) and the Otis Project (FERC No. 8277). International Paper offers the following responses to DEP's comments:

- ***Dissolved Oxygen Data:*** The calibration information was done. Unfortunately the records were misplaced and a copy was not maintained. It is important to note there is little difference between the Town of Jay USGS monitor and the FERC probe. In fact, the Jay probe is calibrated weekly. We believe the Class C dissolved standards were met based on the information from both probes.

  In the future, copies will be made of all calibration records to insure against accidental loss. Additionally, we are working on a method to check the results daily to prevent any reoccurrence of the issue.

- ***Macroinvertebrate Sampling:*** As you are aware, in 2002 the Department found the Livermore impoundment did not meet Class C standards. On January 6, 2004, International Paper responded in writing to DEP on this issue. A copy of the letter is attached. The following highlights the pertinent issues set forth in the letter:

  1. The 2002 data for the Livermore impoundment is invalid since the river flow was below 7Q10 when the rock baskets were in the river.

  2. DEP regulations, Chapter 579, *Classification Attainment Evaluation Using Biological Criteria for Rivers & Streams*, Section 3(G) (1) states, "Where there is documented evidence of conditions that could result in uncharacteristic findings, allowances may be made to account for those situations ...." Additionally, G(1) states that "Professional judgment may be utilized when conditions are found to be atypical to the derivation of the linear discriminate model ...." The professional opinion of International Paper's consultant is that this sample was "indeterminate" based on the regulation and the low flow situation.

  3. DEP guidance allows for repeat sampling when sampling results are not clear-cut. On page 7 of DEP guidance, dated November 2003, the question proffered is "What happens if a water body is found to be below its assigned statutory class?" DEP

responds, in part, that "[i]n some cases, this decision is clear-cut, while in other cases, it may be deemed prudent to repeat the sampling the following season to confirm the outcome." As International Paper has stated before, the present case clearly calls for additional work. Per the regulations, the sampling was repeated in 2003 and the segment was found to be in attainment and not impaired. We are requesting the work continue as part of the next license.

4. The biomonitoring work was redone in 2003. That work confirmed that the " C" river classification biocriteria are being met. The biomonitoring will again be repeated in 2004.

5. The Livermore test area is an impoundment behind a hydro dam. It is not a free-flowing river and consideration needs to be given to this. The fact that it passed the C biocriteria classification in 1998, 1999, 2000, 2001 and 2003 indicates excellent water quality.

6. Finally, it is important to recognize that the retroactive use of testing data may violate the rule in Bowen v. Georgetown University Hospital, 488 U.S. 204, 208 (1988), which clarified that a legislative grant of rulemaking authority does not include the authority to promulgate retroactive rules unless the legislature explicitly so states. Thus, the retroactive transition provisions of Chapter 579, which did not take effect until May 27, 2003, are beyond the scope of rulemaking authority and are void because nothing in the authorizing legislation, 38 M.R.S.A. § 464(5), explicitly permits retroactively. DEP Regs. Ch. 579, § 6. As a result, test data from 2002 cannot be the basis for any regulatory or enforcement action in this case.

I hope the above responses further clarify for you International Paper's position in this matter. If after reviewing these comments you have any questions, please call me at 897-1422.

Sincerely,

Thomas B. Saviello
Manager, Environmental Services

TBS/kjt
KI\WA\DM040512.doc
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